Preliminary Assessment (PA)

PRELIMINARY ASSESSMENT REPORT
MISCHER WHOLESALE A/C (SITE 155)
HOUSTON, TEXAS
TXD987990322

Prepared for:

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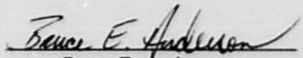

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April 13, 1992

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1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA), Region VI has contracted Roy F. Weston, Inc. (WESTON) to perform a Preliminary Assessment (PA) of the Mischer Wholesale A/C (Site 155), EPA I.D. No.: TXD987990322 located in Houston, Harris County, Texas. The purpose of this investigation was to collect information concerning conditions at and around the Mischer Wholesale A/C site sufficient to assess the threat to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. Site information is based on WESTON's review of available regulatory file information, a comprehensive target survey, and a site visit conducted on January 7, 1992. WESTON has prepared this PA Final Report under EPA Contract No.: 68-W9-0015; Work Assignment No. 22-6JZZ.

This report is structured consistent with the PA guidance. The report is broken down in the following sections:

- Site characteristics, site history, and waste characteristics;
- Pathway conditions;
  - Groundwater
  - Surface water
  - Soil and air
- Potential Human and Environmental Targets; and
- Pathway conclusions.

Conclusions of the PA Process are drawn from the various sections of the report and bring together information that is used to evaluate the site. These conclusions are then used to identify whether the site requires additional investigation.

2.0 SITE CHARACTERISTICS

Information about site location, description, operational history and waste characteristics is based on reviewing several regulatory agency files and records, topographic maps, aerial photographs, and interviews with site representatives. All references, including Appendix A (photographic log), are provided following the text of this report.

WESTON conducted an onsite reconnaissance visit on January 7, 1992 in accordance with the Scope of Work requirements of the Task Work Plan (TWP) and Health and Safety Plan (HASP) which were submitted to EPA for approval prior to the field investigation. Mr. Jerry Hamilton, president of Hamilton Heavy Equipment, Inc. (HHE), which now owns the site, was present during the time of the investigation. WESTON personnel walked around on the property and took photographs to document site conditions on January 7, 1992. Alternative source sites and nearby targets were also identified during field reconnaissance (Reference 1). WESTON completed the Site Reconnaissance Checklist General Site Information Worksheet (Reference 2) and the EPA Evaluation Checklist (Reference 3). The EPA Potential Hazardous Waste Site Preliminary Assessment Form is provided in Reference 4.

The WESTON team completed field activities using Level-D personal protection equipment. The field team also monitored ambient air quality on a continuous basis with a Flame Ionization Detector (FID). Conditions requiring an upgrade of personal protection equipment were not encountered during field activities.

2.1 Site Location

The Mischer Wholesale A/C (MW) site is located on Rankin Road approximately 3 miles east of the I-45/Rankin Road intersection and approximately 16 miles north northwest of downtown Houston. HHE company cards and the mailbox onsite indicate 1823 Rankin Road, but the company marker onsite is marked 1807 Rankin Rd. All documents provided to WESTON use the 1823 address and this report considers this to be correct. The site is one mile west of Houston Intercontinental Airport. The geographic coordinates are 29°58'06.0" north latitude and 95°22'15.8" west longitude (Reference 5). A Site Location Map derived from USGS 7.5-minute Texas Quadrangle Maps is provided as Figure 1 (Reference 6). The site is located in an industrial to rural area. The Gatewood subdivision is located approximately 1.5 miles to the south of the site. Most of the land in the area is not developed, however, there are industrial complexes located near the site. An aerial photograph of the site and surrounding area is provided in Reference 7.

Harris County, Texas is generally characterized by a subtropical climate. Summer months are typically very warm and very humid, and the winter months are generally mild. The average annual low and high temperatures for the area are 56.5°F and 79°F, respectively. The average

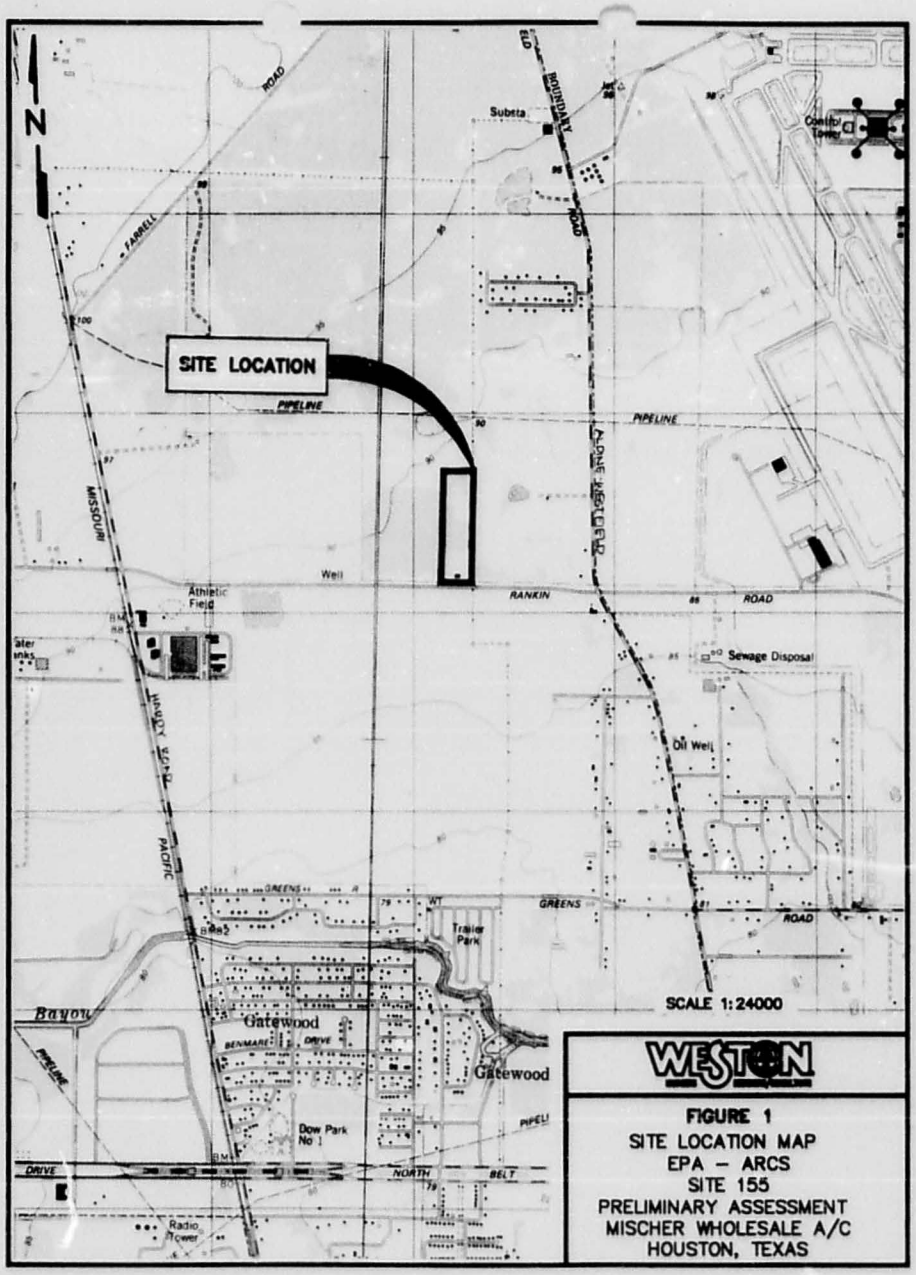

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FIGURE 1
SITE LOCATION MAP
EPA – ARCS
SITE 155
PRELIMINARY ASSESSMENT
MISCHER WHOLESALE A/C
HOUSTON, TEXAS

monthly low and high temperature for January is 40°F and 61.5°F, respectively. The average monthly low temperature for July is 73°F, and the average monthly high is 94°F. The mean annual precipitation for the Houston area is approximately 44 inches. The average surface water evaporation rate is approximately 52 inches per year. Net precipitation is therefore approximately minus 8 inches per year (Reference 8).

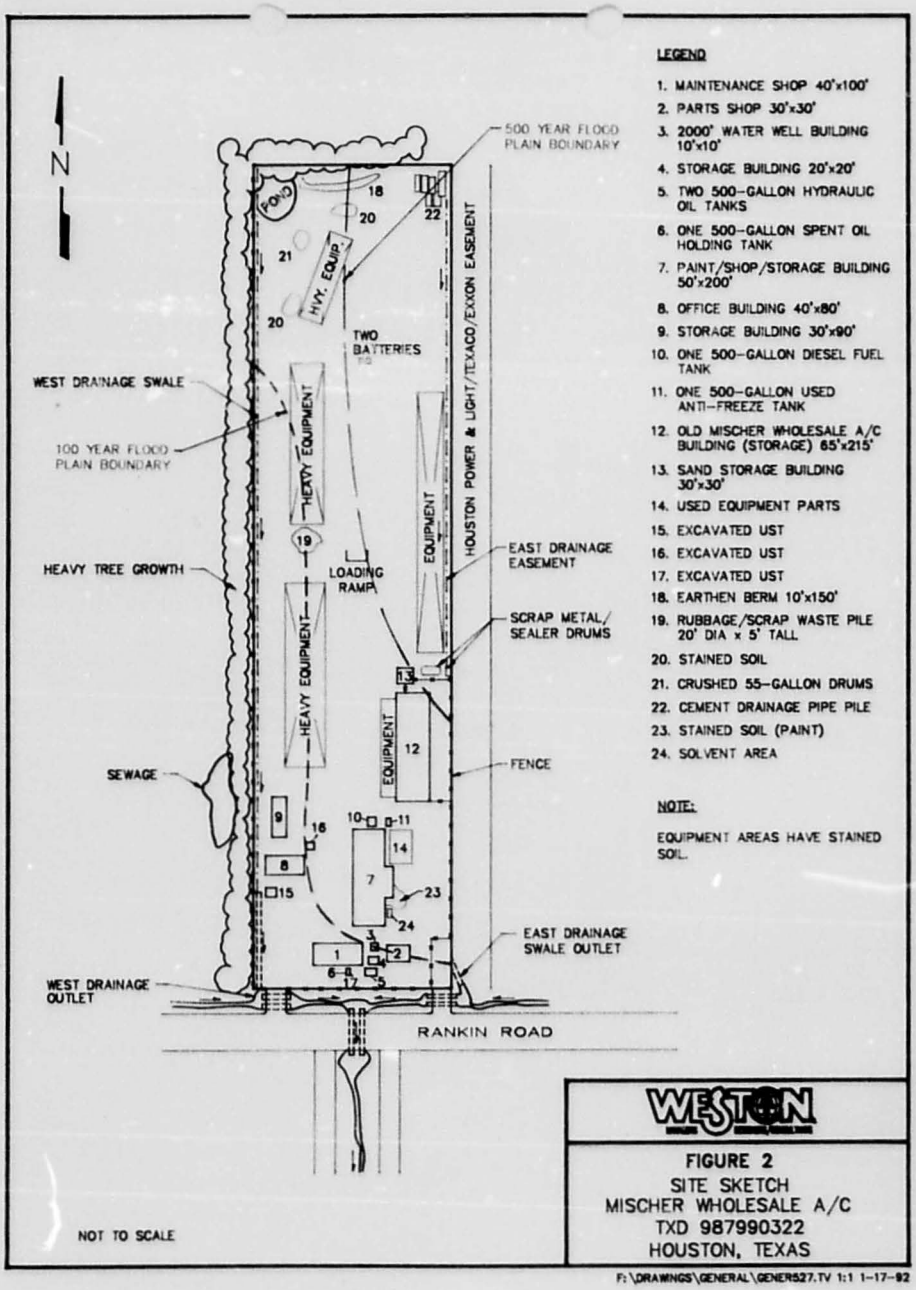
2.2 Site Description

The site encompasses approximately 17 acres (Reference 9) and is partially surrounded by a fence. This fence restricts access from Rankin Road and along the western site boundary. A Site Sketch is provided as Figure 2. Site photographs are provided in Appendix A and notes on the site are provided in Reference 10. The southern third of the site is paved with concrete, while the middle and northern thirds are unpaved. The main entrance to the site is located near the southwestern corner of the property (Photo: 1). There are several structures onsite including an office, maintenance and parts buildings, a paint booth/storage building, and several storage buildings (Photos: 1, 2, 3, 4, 5).

HHE bought the site from MW on March 1, 1991. Mischer left several large concrete drainage pipes on the northeast end of the lot. Mr. Hamilton stated that MW constructed a berm along the north boundary of the site before selling the property (Photo 6). No sources were available that could indicate the types of materials used to construct the berm. Drainage swales flow north to south along the east and west property lines. HHE and MW have removed several underground storage tanks (UST) from the site in compliance with Texas Water Commission directives. A copy of the excavation and closure report is provided in Reference 11. A copy of closure letter from the Texas Water Commission (TWC) is provided in Reference 12 as demonstration of compliance with the appropriate requirements.

The surface soils found at the site include the Benard series and the Clodine series. The Benard series exists throughout most to the site. It consists of deep, clay-loam soil. The Clodine series, consisting of deep, loamy soil, exists in the northwest corner and southeast corner. Both soil types are poorly drained and possess moderate permeability (Reference 13).

Site surface hydrology is characterized by overland flow to drainage swales. The site has both east and west drainage swales which run from north to south. These swales are between one and three feet deep and tie into a larger drainage easement which parallels the site's southern boundary, along Rankin Road (Photos: 1, 2). Both swales collect onsite overland flow and the west swale collects additional water from the property west of the site. The flow in the easement south of the site (Photos: 1, 2) is from the east and west swales to a point where there are two concrete drainage pipes which carry the water south under Rankin Road and release the water into a large drainage channel (Photo: 7) which leads south to Greens Bayou.



LEGEND

1. MAINTENANCE SHOP 40'x100'
2. PARTS SHOP 30'x30'
3. 2000' WATER WELL BUILDING 10'x10'
4. STORAGE BUILDING 20'x20'
5. TWO 500-GALLON HYDRAULIC OIL TANKS
6. ONE 500-GALLON SPENT OIL HOLDING TANK
7. PAINT/SHOP/STORAGE BUILDING 50'x200'
8. OFFICE BUILDING 40'x80'
9. STORAGE BUILDING 30'x90'
10. ONE 500-GALLON DIESEL FUEL TANK
11. ONE 500-GALLON USED ANTI-FREEZE TANK
12. OLD MISCHER WHOLESALE A/C BUILDING (STORAGE) 65'x215'
13. SAND STORAGE BUILDING 30'x30'
14. USED EQUIPMENT PARTS
15. EXCAVATED UST
16. EXCAVATED UST
17. EXCAVATED UST
18. EARTHEN BERM 10'x150'
19. RUBBAGE/SCRAP WASTE PILE 20' DIA x 5' TALL
20. STAINED SOIL
21. CRUSHED 55-GALLON DRUMS
22. CEMENT DRAINAGE PIPE PILE
23. STAINED SOIL (PAINT)
24. SOLVENT AREA

NOTE:

EQUIPMENT AREAS HAVE STAINED SOIL.

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FIGURE 2
SITE SKETCH
MISCHER WHOLESALE A/C
TXD 987990322
HOUSTON, TEXAS

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2.3 Operational History and Waste Characteristics

The site was originally developed by Mischer Wholesale A/C, a subsidiary of the Mischer Corporation. MW stored air conditioning units onsite. The Mischer Corporation also operated a cement plant by the name of City Paving, Inc. onsite. No evidence of the cement plant was observed during WESTON's site visit on January 7, 1992. HHE bought the site in early 1991. HHE stores, paints, services, and ships heavy equipment from the site to construction sites all over the United States and the world. HHE offices are onsite. Mr. Hamilton and his staff provided background site information and current site operation information.

The waste types observed at the site are those related to the maintenance, operation, painting, and storage of heavy construction equipment. During the site visit, the WESTON team documented the following:

- Suspected petroleum-stained soil throughout the site caused by the storage and maintenance of heavy construction equipment (Photos: 8, 9, 10);
- One, 500 gallon used antifreeze storage tank, with secondary containment that is not functional because there is no valve on the PVC drainage pipe (Photo: 11);
- One, 500 gallon diesel fuel storage tank, with secondary containment that is not functional because there is no valve on the PVC drainage pipe (Photo: 11);
- One, 500 gallon spent hydraulic oil storage tank, with secondary containment that is not functional because there is no valve on the PVC drainage pipe (Photos: 12, 13, 14);
- Two, 500 gallon storage tanks containing hydraulic oil, with secondary containment that is not functional because of a PVC drainage pipe (Photo: 14);
- Scrap mechanical parts and metal piles (Photo: 15);
- Discolored runoff water (Photos: 16, 17, 18);
- Five, 55 gallon drums in drainage swales (Photos: 19, 20, 21, 22);
- Paint solvents and paint stained soils (Photos: 13, 23); and
- Trash in the onsite drainage swales (Photos: 24, 25, 26).

The only hazardous substances stored or present onsite are antifreeze, hydraulic oils, and those substances associated with painting as reported by Mr. Hamilton. The only evidence observed of dumping onsite is the unknown material used to construct the berm. Details concerning specific observed waste source areas are presented in the subsequent sections of this report.

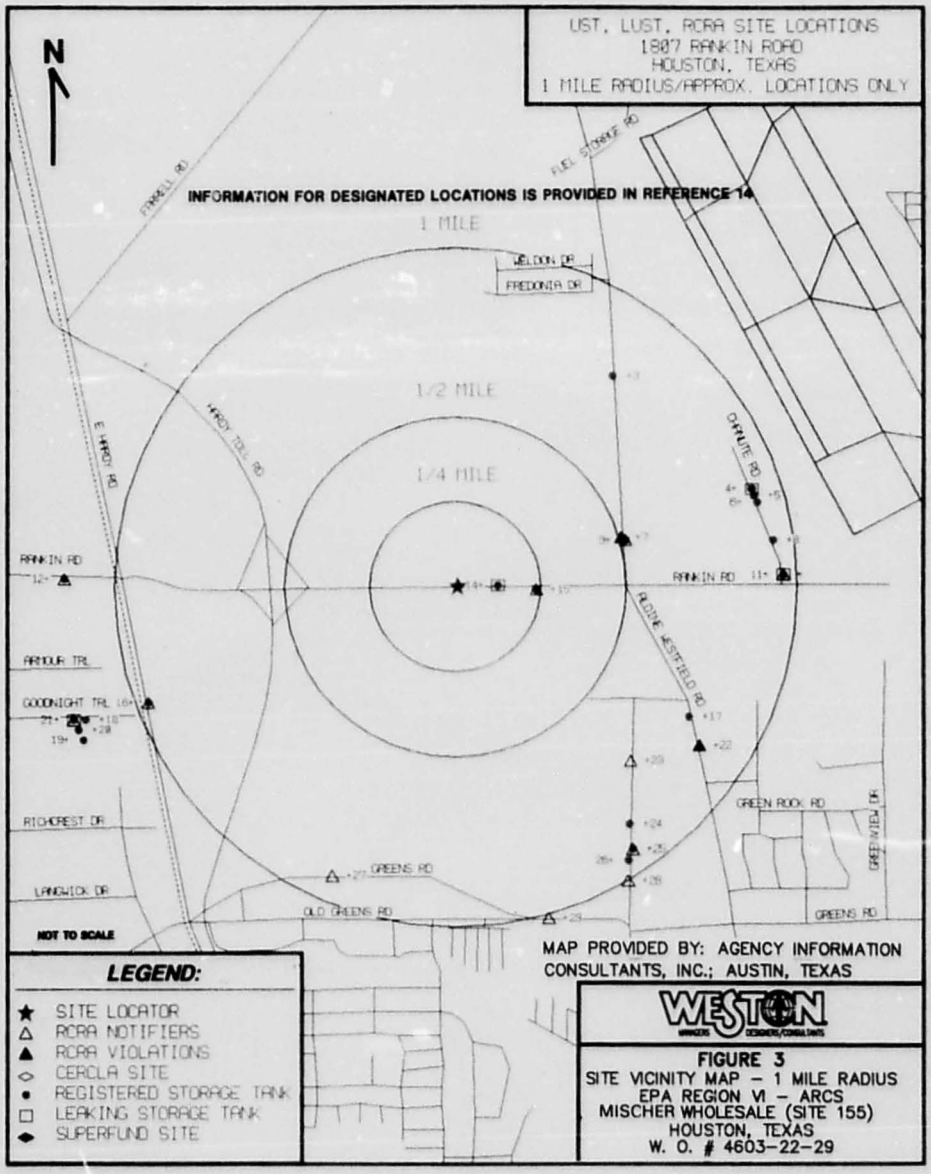
2.4 Regulatory History

Background information was solicited from the following regulatory agencies:

- EPA Region VI,
- Texas Water Commission (TWC),
- Texas Department of Health (TDH),
- Texas Air Control Board (TACB),
- City of Houston Fire Department, and
- City of Houston Environmental Health Department.

Except for the preliminary background information supplied by EPA Region VI (Reference 3) and the TWC UST Report (Reference 11), none of these regulatory agencies provided records on the Mischer Wholesale A/C site. Mr. Hamilton stated that HHE does not have any environmental-related permits.

Sites identified as CERCLA, RCRA notifiers and violators, registered storage tanks, leaking storage tanks, and superfund sites within four miles of the site have been mapped and are provided as Figures 3 and 4 (Reference 14). Figure 3 is the Site Vicinity Map - 1 Mile Radius and Figure 4 is the Site Vicinity Map - 4 Mile Radius.



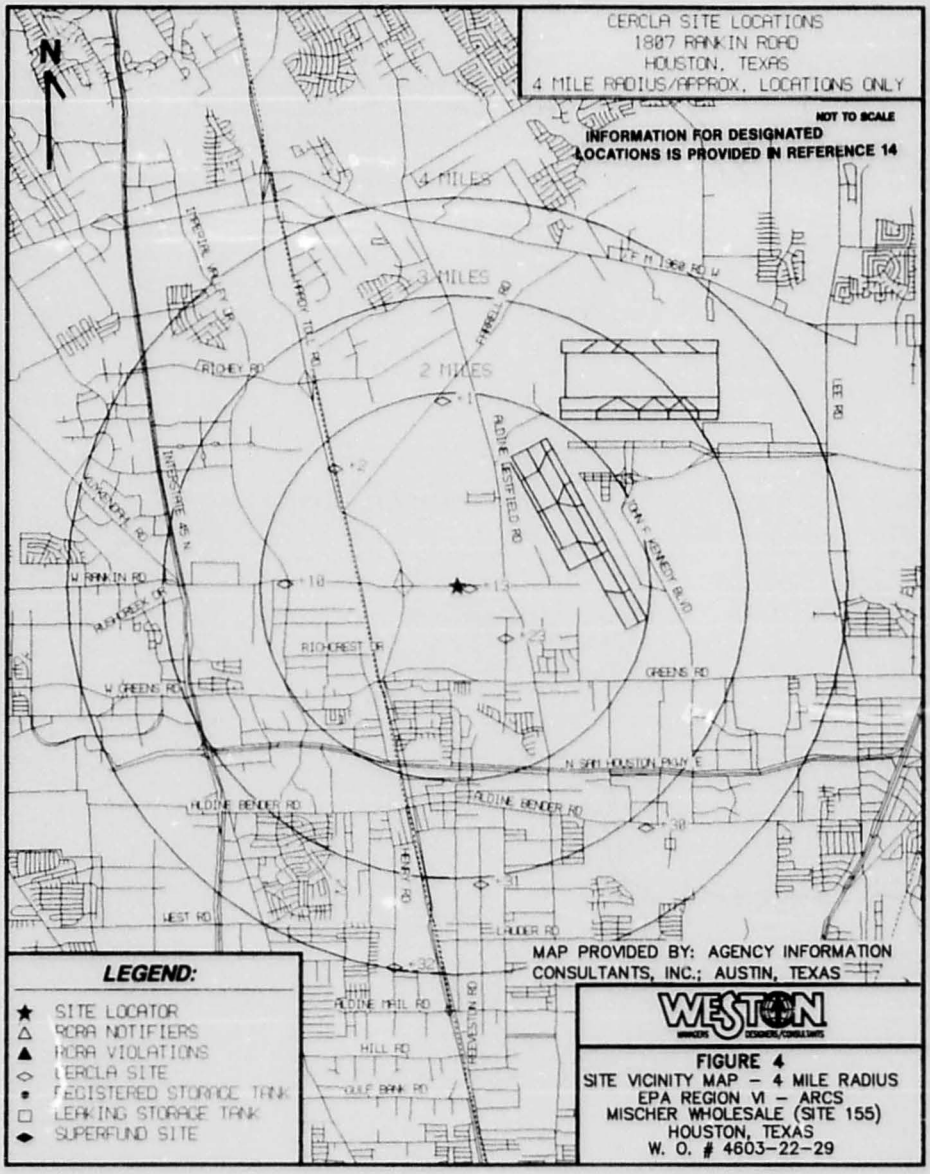


FIGURE 4
SITE VICINITY MAP – 4 MILE RADIUS
EPA REGION VI – ARCS
MISCHER WHOLESALE (SITE 155)
HOUSTON, TEXAS
W. O. # 4603-22-29

3.0 GROUNDWATER PATHWAY

There are four major pathways that are assessed during the PA. These pathways are groundwater, surface water, soil exposure and air. Within each pathway, present site conditions are assessed for their potential impact on the surrounding population and environmental targets. This section evaluates the groundwater pathway by first describing the hydrogeologic setting of the site followed by groundwater targets.

3.1 Hydrogeologic Setting

Harris County, Texas is located in the Lower Coastal Plain physiographic province of the Gulf Coast Region. Geologically, this are is characterized by a wedge of overlapping formations that tend to increase in thickness toward the coast. A series of Quaternary and Tertiary-aged fluviatle deposits underlie the MW site (Reference 15). These formations generally consist of clay, silt, sand and gravel deposited in deltaic stream channel, point bar, natural levee, backswamp or mudflat environments. From youngest to oldest, the deposits nearest the surface include the following:

- Beaumont Formation
- Lissie Formation
- Willis Formation
- Goliad Formation

The Pleistocene-aged Beaumont Formation regionally consists of clay, silt and sand. At the surface of the MW site, the Beaumont Formation is predominantly composed of clay which exhibits low permeability, high water capacity, poor drainage, and level to depressed relief (Reference 15). The Beaumont Formation is probably less than 50 feet thick in this area.

The Lissie Formation underlies the Beaumont Formation. This formation also consists of clay, silt and sand, but it is different from the Beaumont Formation in that it contains notable amounts of gravel. Grain size in the formation also increases with depth. The Lissie Formation measures approximately 200 feet in thickness (Reference 15).

The Willis Formation contains more coarse-grained sediments than the overlying units. Like the Beaumont and Lissie Formations, the Willis Formation consists of clay, silt and sand deposits which may vary significantly in thickness over short distances. The Willis Formation generally has coarser-grained sand than the geologic units above it. The Willis Formation is at most 75 feet thick (Reference 15).

The hydrologic boundaries of the regional aquifers transgress the lithologically-based stratigraphic formational boundaries. These aquifers have different names than the general

stratigraphic units (Reference 15). The important hydraulic units, from the shallowest to deepest include the following:

- Chicot Aquifer
- Evangeline Aquifer
- Burkeville Confining System
- Jasper Aquifer

The four formations described in the previous paragraphs generally comprise the Chicot Aquifer, which is divided into two units. The upper unit of the Chicot Aquifer includes the upper portion of the Beaumont Formation and any overlying alluvial deposits. The Lower Unit encompasses the Willis and Lissie Formations, and the remaining portion of the Beaumont Formation. The base of the Chicot Aquifer is somewhat arbitrarily defined as the base of the regional Pleistocene-aged deposits which approximately corresponds to the base of the Willis Formation. At the site, the Chicot Aquifer crops out at the surface. The Chicot is noted for its abundance of water in Southeast Texas which is due to its high percentage of sand (Reference 15).

The Evangeline Aquifer lies below the Chicot waterbearing units. Being as much as 2,000 feet thick, it is composed of at least the entire thickness of the Tertiary-aged Foliad Formation Sands which underlie the Willis Formation. The top of the Evangeline aquifer may be as much as 600 feet below ground surface at the MW site. This aquifer yields large quantities of good quality ground water, and it is considered to be one of the most prolific aquifers of the Coastal Plain (Reference 15).

The Burkeville Confining System separates the Evangeline aquifer from the underlying Jasper Aquifer. The Burkeville System consists of a series of silt and clay strata that serve as confining units because of its relatively large percent of fine grained sediments as compared to the aquifers above and below. The top of this confining layer is approximately 1,300 feet below ground surface at the site (Reference 15). The thickness of the Burkeville reportedly ranges from 300 to 500 feet.

The Jasper Aquifer underlies the Burkeville Confining System. The top of the aquifer varies, lying within the Fleming and Oakville Formations depending on location. The depth to the Jasper Aquifer is approximately 1,700 feet in the area of the MW site (Reference 15).

3.2 Groundwater Pathway Targets

Groundwater in the area is used as a source of drinking water. Numerous municipal and private drinking water supply wells have been identified within a four-mile radius of the site. A complete listing of these wells provided by the Harris-Galveston Coastal Subsidence District, is presented in Reference 16. WESTON also located wells on the USGS topo map within one mile

of the MW site (Reference 17). Several drinking water wells have been located within four miles of the site. MW has a 200 feet deep well onsite. Information about wells closest to the site was provided by the Harris-Galveston Coastal Subsidence District (Reference 16). Wells listed within one mile of the site are summarized in Table 3-1. Municipal wells listed from one to four miles from the site are summarized in Table 3-2. Reference 18 contains telephone logs with owners of various wells within 1.7 miles of the MW site. The nearest offsite well with a known target population is Jetra Fuels Terminaling Corp., located 0.59 miles northeast of the site, on Aldine-Westfield Road. This well (#3465) which services approximately 50 people (Reference 19) is approximately 400 feet deep and produces out of the upper part of the Evangeline Aquifer.

3.3 Groundwater Pathway Conclusions

Based upon the site description, history, and local geology and hydrogeology, there is a potential for a release to groundwater at the MW site. The potential for hazardous substance migration from the ground surface to groundwater is moderate for the following reasons:

- The nonfunctional secondary containment of hazardous substances such as used antifreeze, hydraulic oils, and spent oils.
- The areas of stained soil located throughout the site.
- Unknown materials buried in the berm on the north side of the site.

Several nearby drinking wells could potentially be threatened by a release to groundwater. The number of potential targets, therefore, is large. Primary targets include both workers at nearby facilities and the Greens Parkway Municipal Utility District well.

TABLE 3-1

TARGET WATER WELL SUMMARY WITHIN ONE MILE OF MISCHER WHOLESALE A/C SITE

WELL NUMBER	OWNER	APPROXIMATE DISTANCE FROM SITE (miles)	DEPTH (feet)	LATITUDE	LONGITUDE	REPORTED 1990 PUMPAGE (gallons)	INSTALLATION DATE
3177	HHE (City Pavers, Ltd.)	0	242	29°57'57"N	95°22'14"W	400,000	1973
3465	Jetra Fuels Terminaling Corp.	0.59	400	29°58'37"N	95°21'55"W	3,427,400	1979
3967	Greens Parkway M.U.D.	0.62	1200	29°57'34"N	95°22'07"W	25,654,000	1990
4290	Security Div. Dresser Ind.	0.90	300	29°57'31"N	95°22'31"W	2,969,500	1983
4291	Security Div. Dresser Ind.	0.90	300	29°57'31"N	95°22'31"W	2,969,500	1983
3159	Southwestern Bell Tele. Co.	0.95	284	29°57'17"N	95°21'49"W	300,000	1973
8880	Southwestern Bell Tele. Co.	1.00	455	29°58'59"N	95°21'58"W	76,500	1964

Further well information is provided in Reference 16

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TABLE 3-2

MUNICIPAL WELLS FROM 1 TO 4 MILES FROM MISCHER WHOLESALE A/C SITE

WELL NUMBER	OWNER	APPROXIMATE DISTANCE FROM SITE (miles)	DEPTH (feet)	LATITUDE	LONGITUDE	REPORTED 1990 PUMPAGE (gallons)	INSTALLATION DATE
2553	Drilco	1.38	850	29°57'49"N	95°23'10"W	34,399,350	1976
3400	Lochinvar Golf Club	1.42	850	29°58'55"N	95°22'56"W	40,607,900	1979
3401	Lochinvar Golf Club	1.42	850	29°58'55"N	95°22'56"W	40,607,900	1979
3109	North Belt U.D.	1.56	1200	29°56'45"N	95°21'45"W	30,741,500	1978
3572	North Green M.U.D.	1.62	0	29°57'39"N	95°23'20"W	37,000,00	1981
1071	City of Houston	1.69	1540	29°58'54"N	95°20'44"W	133,212,000	1965
2798	North Green M.U.D.	1.86	1595	29°57'41"N	95°23'34"W	37,000,000	1990
2799	North Green M.U.D.	1.86	1969	29°57'41"N	95°23'34"W	37,000,000	1990
3772	Richey Road M.U.D.	2.00	1200	29°59'32"N	95°23'00"W	36,744,000	1982
3463	North Belt U.D.	2.16	1100	29°56'12"N	95°22'04"W	38,741,500	1980
3271	City of Houston	2.40	1475	29°57'05"N	95°23'50"W	277,717,000	1979
2461	City of Houston	2.88	1490	29°56'10"N	95°23'37"W	196,071,000	1975
1072	City of Houston	2.89	1545	29°59'11"N	95°19'41"W	133,212,000	1965
2967	Woodcreek M.U.D.	2.91	1000	30°00'24"N	95°23'06"W	95,058,000	1978
1073	City of Houston	2.94	1630	29°59'15"N	95°19'40"W	245,277,000	1968
1610	City of Houston	3.19	1460	29°56'10"N	95°24'01"W	385,867,000	1973
3827	Harris County U.D.	3.26	1250	29°58'52"N	95°24'45"W	21,304,000	1990

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TABLE 3-2 (CONTINUED)

MUNICIPAL WELLS FROM 1 TO 4 MILES FROM MISCHER WHOLESALE A/C SITE

WELL NUMBER	OWNER	APPROXIMATE DISTANCE FROM SITE (miles)	DEPTH (feet)	LATITUDE	LONGITUDE	REPORTED 1990 PUMPAGE (gallons)	INSTALLATION DATE
3929	Harris County M.U.D.	3.48	400	29°55'25"N	95°20'30"W	735,100	1990
1731	City of Houston	3.57	1145	29°55'23"N	95°23'34"W	47,985,000	1975
1619	City of Houston	3.61	1082	29°57'00"N	95°24'50"W	769,599,000	1975
3745	Inter Wood M.U.D.	3.75	1600	29°55'56"N	95°19'30"W	10,568,000	1990
3793	Inter Wood M.U.D.	3.76	1600	29°55'55"N	95°19'30"W	10,568,000	1982
1665	City of Houston	3.95	870	29°55'18"N	95°24'03"W	47,985,000	1966
1666	City of Houston	3.95	1270	29°55'18"N	95°24'03"W	47,985,000	1968

Further well information is provided in Reference 16

4.0 SURFACE WATER PATHWAY

This section evaluates the second major pathway, surface water. Hydrologic features, surface water targets, and pathway conclusions are discussed in the following paragraphs.

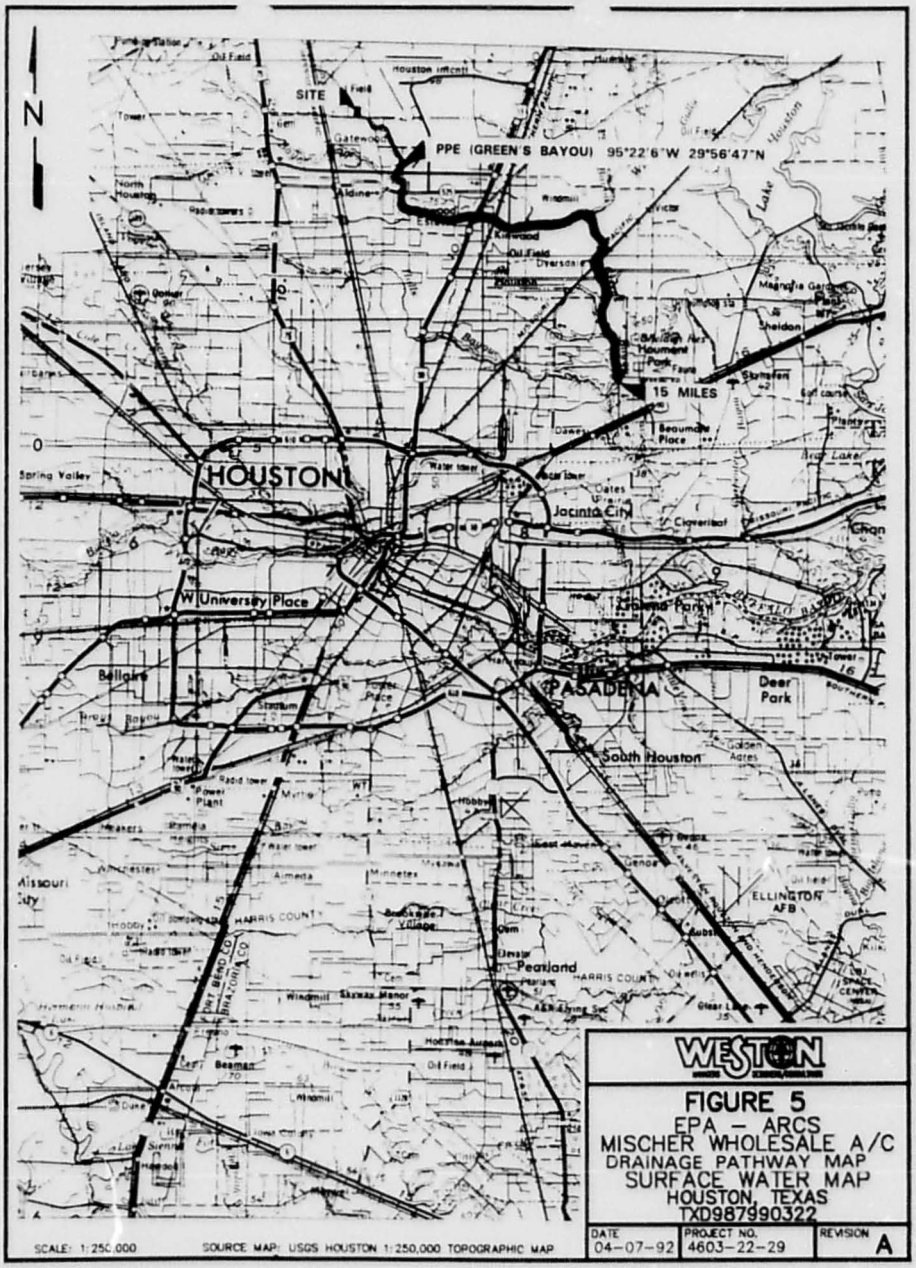
4.1 Hydrologic Setting

Surface runoff at the Mischer Wholesale site is basically overland flow to either of the drainage swales that run from north to south, located along the east and west property lines. These swales are predominately one to three feet deep and are over-grown with weeds and trees. The east swale runs from the north end of the site to about mid-site where runoff is routed by underground concrete pipe to the drainage easement located along the southern property line (Figure 2). WESTON's PA did not determine whether runoff from the Baker-Hughes wastewater treatment and tubing plant, located east of the site, also drains to the drainage easement.

The west swale extends from the north end of the site to approximately 100 yards from the southern boundary where runoff enters an underground concrete drainage pipe. Water from the pipe discharges into the drainage easement located south of the site (Photos: 1, 2, 27). Water discharged from the western swale flows east along the south drainage easement. At the northwest corner of the site there is an area of standing water, approximately 20 feet in diameter and 0.5 feet deep. This ponding is attributed to the poor drainage conditions in the northwest corner of the site and record rainfall during December 1991 and January 1992. About mid-site along the west swale, water from the lot due west of the site drains into the swale. During WESTON's site visit this water and the surrounding area smelled like hydrogen sulfide. The offsite inflow along the west side was the only offsite influence on the site's surface water observed by the field team. It appeared that both onsite drainage swales had flows of less than 10 cfs.

The site is situated within the San Jacinto River Drainage Basin (Reference 20). Water in the drainage easement along the southern property line flows to the centerline of the site into two concrete drainage pipes that lead south under Rankin Road where it discharges into a large, well maintained storm water channel. The channel flows approximately 1.5 miles south where it discharges into Greens Bayou, the principle perennial stream in the area. The probable point of entry (PPE) of a release from MW is located at Greens Bayou. The geographical coordinates of the PPE are 29°56'47" north latitude and 95°22'6" west longitude (Reference 5). The average flow of the bayou is 38 cfs at the gauging station near U.S. Highway 75, near Houston, Texas (Reference 20). Figure 5 is a 15 mile downstream surface water map.

Turkey Creek, located approximately 2.5 miles north of the site, is an intermittent stream which feeds into Cyprus Creek. Cyprus Creek discharges into Spring Creek which then flows into



SCALE: 1:250,000 SOURCE MAP: USGS HOUSTON 1:250,000 TOPOGRAPHIC MAP

WESTON

FIGURE 5
EPA – ARCS
MISCHER WHOLESALE A/C
DRAINAGE PATHWAY MAP
SURFACE WATER MAP
HOUSTON, TEXAS
TXD987990322

DATE	PROJECT NO.	REVISION
04-07-92	4603-22-29	A

Lake Houston. It appears that the natural slope of the area is from northwest to southeast; therefore, Turkey Creek should not receive overland flow from the site.

Based upon flood plain maps, approximately 20% of the MW site lies within the 100 year flood plain and approximately 70% of the site is in the 500 year flood plain (Figure 2). The remainder of the site is outside the 500 year flood plain boundary. A Flood Plain Map is provided in Reference 21.

4.2 Surface Water Pathway Targets

The City of Houston maintains a major drinking water intake on Lake Houston approximately 7 miles from the site. Lake Houston is not believed to be a receptor of site-derived water because of the distance to Turkey Creek and the general trend of surface water drainage is to the southeast (Reference 6). Surface water from the site drains into Greens Bayou which does not enter Lake Houston. There are no other significant surface water targets that have been identified within 15 miles downstream of the site. No municipal drinking water intakes or commercial fish hatcheries have been identified in Greens Bayou. Additionally, there have been no wetlands identified at this time due to a lack of federal wetland mapping of the area. It is likely, however, that some wetlands exist along Greens Bayou.

The local population who may fish or play in the drainage channel and Greens Bayou is the most notable target of the surface water pathway. The number of people in these categories have not been quantified. No persons were seen fishing or playing in and around major drainage easements and southern channel during the reconnaissance of the site area. South of the site, approximately 1.5 miles is the Gatewood subdivision. This subdivision is located near the storm water channel that carries the sites surface water runoff.

The probable point of entry of any site-derived contaminants into Green's Bayou is located approximately 1.5 miles south-southeast of the site where the southern drainage channel, south of Rankin Road, enters Greens Bayou.

4.3 Surface Water Pathway Conclusions

Based upon the site description, history, and local hydrology, the release of a hazardous substance from the site to surface water is suspected for the following reasons:

- Poor housekeeping practices,
- Several drums were observed lying in site drainage pathways, and
- Discoloration of site drainage water was observed.

The cause of surface water discoloration is unknown at this time. The source of the discolored water may be due to the degradation of weeds, trees, and other organics in the two drainage swales. There was no indication from the FID of organics emanating from either drainage swale. The nearest surface water targets are workers onsite and people living in the Gatewood Subdivision near the storm water channel.

5.0 SOIL EXPOSURE PATHWAY

This section discusses the soil exposure pathway.

5.1 Site Physical Conditions

Vehicle access to the Mischer Wholesale A/C site is restricted along Rankin Road where the two entrances have chain-link fences that prohibit entry. The drainage swales along the east and west property lines also hinder vehicle access to the site. The site however, is not restricted to non-vehicular traffic, because the fence along the eastern property line extends only approximately half the length of the site. The site is relatively inaccessible from the north property line because of dense vegetative growth. Site access is also hindered along the west property line due to dense trees and underbrush just west of the property.

Little vegetation is present onsite apparently due to the movement and storage of the company's heavy equipment. The southern third of the site is paved while the middle and northern end of the site is undeveloped. The northern-most end of the property has trees and a berm that runs east to west. There were no apparent signs of stressed vegetation.

5.2 Soil Exposure Pathway Targets

The population residing around the MW site is a potential target of the soil exposure and air pathways. Using EPAs Geographic Exposure Modeling System (GEMS), WESTON estimated the approximate population around the site within specific distance intervals (Reference 22). GEMS is based on 1980 U.S. Census information. The number of people estimated for each interval is summarized in Table 5-1. The population density estimated for Harris County during the 1990 U.S. Census is approximately 2.72 people per household. The distance to the nearest residence is estimated to be 0.4 mile north of the north property line.

HHE employs eight full-time people to work in the maintenance yard onsite and four full-time people who work in the onsite office. HHE employs four temporary workers depending on the work load.

The population employed by the adjacent facilities is also a potential target. Baker-Hughes, located east of the site, employs approximately 95 people onsite (Reference 23). Western Waste Industries of Texas, Inc., located southeast of the site, employs approximately 100 people onsite (Reference 24). Additional targets located within 4 miles of the MW Site are listed in Table 5-2.

PRELIMINARY ASSESSMENT REPORT
MISCHER WHOLESALE A/C (SITE 155)
HOUSTON, TEXAS
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TABLE 5-1

POPULATION PER DISTANCE INTERVAL AROUND THE SITE

INTERVAL	REPORTED POPULATION
Onsite	12
0 to 1/4 mile	0
1/4 to 1/2 mile	0
1/2 to 1 mile	0
1 to 2 miles	2807
2 to 3 miles	9886
3 to 4 miles	18296

SOURCE: EPA's GEOGRAPHIC EXPOSURE MODELING SYSTEM (GEMS)

PRELIMINARY ASSESSMENT REPORT
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TABLE 5-2

ADDITIONAL TARGETS WITHIN FOUR MILES OF SITE

DISTANCE INTERVAL	POTENTIAL TARGETS	DIRECTION FROM SITE	NOTES
0 to 1/4 mile	Baker-Hughes Wastewater Treatment Plant and Tubing Manufacturing	Adjacent to Utility Easement East	Reference 24
	Western Waste Industries	Southeast	Reference 25
1/4 to 1/2 mile	TAD USA	East-Southeast	
	Robinsons Paint & Body	Northeast	
	Surface Water	End of unimproved road, off Aldine-Westfield Rd., East	
	Greenvalley Baptist Church	East-Southeast	
1/2 to 1 mile	Walden Pines Houses	North-Northeast	≈ 30 units
	Airtex Paint & Body	North-Northeast	
	Jetra Fuels/Preco Turbine Services	North-Northeast	≈ 80 people
	Athletic Field/Smith Int'l	Southwest	

TABLE 5-2 (CONTINUED)

ADDITIONAL TARGETS WITHIN FOUR MILES OF SITE

DISTANCE INTERVAL	POTENTIAL TARGETS	DIRECTION FROM SITE	NOTES
1 to 2 miles	Intercontinental Airport	East	
	Greens Bayou	South	
	Gatewood Subdivision	South	
	Trailer Park	South	
	IBI Industries	Southwest	
2 to 3 miles	Intercontinental Airport	East	
	Aldine Jr. High School	South, off Hwy. 525	Staff: 225 Students: 2350
	Greens Bayou	Southeast	
	Greenspoint Mall	Southwest, adjacent to I-45	
	Turkey Creek	North-Northwest	
	North Harris County College	North	Students: 2300

TABLE 5-2 (CONTINUED)

ADDITIONAL TARGETS WITHIN FOUR MILES OF SITE

DISTANCE INTERVAL	POTENTIAL TARGETS	DIRECTION FROM SITE	NOTES
2 to 3 miles	Nimitz High School	Northeast	Staff: 102 Students: 1944
	Clifford M. Dunn Elem.	Northeast	Staff: 60 Students: 858
3 to 4 miles	Magrill School	North	Staff: 75 Students: 1060
	Teaque School	North	Staff: 92 Students: 1070
	Stones Lake	Northeast	
	Golf Course	East-Southeast, adjacent to Greens Road	

TABLE 5-2 (CONTINUED)

ADDITIONAL TARGETS WITHIN FOUR MILES OF SITE

DISTANCE INTERVAL	POTENTIAL TARGETS	DIRECTION FROM SITE	NOTES
3 to 4 miles	Pine Grove School	South, off Hardy Rd.	No Information
	Greens Bayou	Southeast	
	Colonial Hills School	South, off Hardy Rd.	Staff: 89 Students: 1062
	Thompson School	Southwest	Staff: 72 Students: 1062
	Aldine High School	Southwest	Staff: 128 Students: 2364
	Stovall Jr. High School	Southwest	Staff: 125 Students: 358

* School information is provided in Reference 25.

Threatened and endangered species listed for Harris County, Texas and their habitat may be additional targets. The species of concern include one plant and four animals which currently or historically have occupied the area surrounding the MW site (Reference 26). These species are listed in Table 5-3. No other sensitive environments have been identified.

5.3 Soil Exposure Pathway Conclusions

Based upon the description and extent of potential waste source areas found onsite, areas of contaminated soil are suspected for the following reasons:

- The 500 gallon tanks have no secondary containment,
- The heavy equipment stored onsite has no containment for vehicle leaks resulting in the potential direct exposure to the environment, and
- There were observed areas of paint and oil stained pavement and soil.

Stained soil is present throughout areas in which heavy equipment is stored. Since most of the equipment is stored on unpaved areas, there is nothing restricting soil contamination. There is no evidence from regulatory agencies that the MW site has had an air emission related problem, but the painting of HHE's heavy equipment could be a release to air since the paint area was not closed off from the surrounding environment. Before the current owner, HHE, Mischer Corp. had a cement plant onsite named City Pavers, Inc. WESTON observed no evidence of this plant.

TABLE 5-3

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES
FOR HARRIS COUNTY, TEXAS

TYPE	COMMON NAME	SCIENTIFIC NAME	NOTES
Plant	Prairie dawn	Hymenoxys texana	Endangered species, historical occurrence only
Amphibian	Houston toad	Bufo houstonensis	Endangered specie
Birds	Bald eagle	Haligeetus lewcocephalus	Endangered species, nesting activity reported
	Artic peregrine falcon	Falco peregrinus tundrius	Threatened species
	Red-cockaded woodpecker	Picoides borealis	Endangered specie

SOURCE: U.S. FISH & WILDLIFE SERVICE, HOUSTON, TEXAS, NOVEMBER, 1991

6.0 AIR EXPOSURE PATHWAY

The air exposure pathway is the fourth pathway being assessed. The potential for airborn contaminants are identified.

6.1 Site Physical Conditions

Based on site reconnaissance, there is no evidence of release to the air pathway. The only potential release is from emissions during painting of heavy equipment

6.2 Air Exposure Pathway Targets

A threat to human and endangered species targets is not expected due to the lack of threat from potential contaminants on the air pathway.

6.3 Air Exposure Pathway Conclusions

Based on the description of potential waste source areas found onsite, it is unlikely that any significant release to the atmosphere has resulted. These assumptions are based on the following:

- Volatile organic vapors were not detected with the FID during site reconnaissance.
- There was no evidence of burn areas or contaminants during the site investigation that would lead to a release to the air pathway.
- The only known potential release to the air is associated with the painting of HHE's heavy equipment.

The WESTON investigation team observed no FID responses during the site inspection. If there was a release to air the number of targets of the air pathway would be large due to the sizeable population surrounding population surrounding the site (Reference 6).

7.0 SUMMARY AND CONCLUSIONS

The Mischer Wholesale A/C site is located on Rankin Road approximately 3 miles east of the I-45/Rankin Road Intersection in north Harris County, Texas and is currently owned by Hamilton Heavy Equipment, Inc., which uses the site to maintain, paint, and store heavy construction equipment. Potential waste sources identified at the site include various 500-gallon storage tanks with non functioning secondary containment, several empty 55-gallon drums and miscellaneous trash lying in site drainage pathways, discolored water exiting the site, and oil and paint-stained soil.

A significant number of population targets exists around and downstream of the site. If hazardous materials are present at the site, exposure potentially may occur through contact with one or more of the following:

- The overland flow routes to surface water pathways onsite have both trash and abandoned drums lying in standing water. The out-flow water of the drainage swales leaving the site is discolored. Persons playing or fishing in the downstream drainage easements and bayou have the potential for coming into contact with surface water from the site.

- Direct exposure of contaminated soil or sediments for those persons or species entering the site or working in or near the drainage pathways. There is also a potential for direct contact from a leak or rupture of the several 500 gallon storage tanks with non-functioning secondary containment.

- There is the potential for groundwater contamination from spills and leaks from equipment, tanks, and discarded drums found onsite. Nearest potential targets are nearby facilities, nearby municipal wells, and the people living at Walden Pines Houses.

- The only known potential release to the air is associated with the painting of HHE's heavy machinery.

- It is not known what type of material was used to construct the berm located along the north property line by Mischer Wholesale A/C.

8.0 REFERENCE LIST

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